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AN ANNOTATED LIST OF THE BUTTERFLIES OF SAN DIEGO COUNTY, CALIFORNIA

BY

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SAN DIEGO, CALIFORNIA

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INTRODUCTION

To produce a complete list of all insects that occur in any large circumscribed area is practically an impossibility. Even an accurate record of all the butterflies to be found in so extensive and varied a territory as San Diego County entails a vast amount of field work at every season of the year, supplemented by ample technical facilities and knowledge. The writer therefore makes no claim of infallibility for the present paper, and presents it merely as the sum of his accumulated data and experience at the present time. The future will doubtless bring about changes and additions, especially when more intensive collecting is done in the eastern and northern parts of the County.

In 1908 the writer published a list[1] containing eighty species and forms. Since that time further collections have been made covering more territory within the County, records have been checked and rumors followed with great care in an effort to render the list as nearly complete as possible. The present list contains the names of 148 species, races, forms and abberrations, several of which have been described since the last list was given to the press, and one of which—Kelsey's Blue—is here given first publication. Most of the butterflies named are represented in the collections of the San Diego Society of Natural History; the others may be found in the collections of local entomologists. Accurate checking has thus been possible.

This paper has been in preparation for the last three years, and the author wishes to express his gratitude to the several people who have helped. Among those to whom especial acknowledgment is due is Dr. John Adams Comstock of Los Angeles, whose excellent new book on the butterflies of California[2] has been the source not only

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[1] WRIGHT, W. S. Annotated List of the Diurnal Lepidoptera of San Diego County, California, based on collections during 1906 and 1907: Journal of the New York Entomological Society, Vol. XVI, No. 3, pp. 153-167, September, 1908.

[2] COMSTOCK, JOHN ADAMS. Butterflies of California. Los Angeles, California, 1927.

of the English names used, but also of certain statements relative to habits and distribution. The sequence and nomenclature of Dr. Comstock's book have been adopted for the present paper instead of those of Drs. Barnes' and Benjamin's "List,"[3] in order to aid amateur collectors who may wish to use this as a check list for local material in combination with "Butterflies of California." To J. D. Gunder of Pasadena the author is also indebted for material assistance in securing specimens and data regarding a number of species and forms here given.

Dr. Comstock was kind enough to read the manuscript of this list and the writer's thanks are hereby tendered him for his kindly and valuable criticism. The writer also desires to express his appreciation of the assistance of George H. Field of San Diego, his companion and coworker in the field. Mr. Field's knowledge of San Diego County and his ability as a collector have been of great value as well as a source of inspiration. Others, whose names occur in the text, have aided in no small way by giving information about species and locations that were unknown to the writer.

It will be noted that no reference is made to the "life zones" of any of the butterflies in the list, as is so often done in the consideration of plants, birds and mammals. As yet no serious attempt has been made to zone San Diego County entomologically. This is a work that would require a vast amount of research and its completion may not be expected for many years to come.

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[3] BARNES, WM. and BENJAMIN, F. H. List of the Diurnal Lepidoptera of Boreal America North of Mexico: Bulletin Southern California Academy of Sciences, Vol XXV, Part 1, January, 1926.

BUTTERFLIES OF SAN DIEGO COUNTY, CALIFORNIA

SUPERFAMILY PAPILIONOIDEA

Family **PAPILIONIDAE**

1. **Papilio zelicaon** Lucas (7)[4]

ANISE SWALLOWTAIL

This is the commonest Swallowtail throughout San Diego County. The larvae are abundant on anise weed and are easily bred, as they will feed on leaves of parsley or carrots if anise is not handy. This insect has been observed feeding on citrus fruit leaves, hence it may be of economic importance.

2. **Papilio indra pergamus** Henry Edwards (8a)

EDWARDS' SWALLOWTAIL

Pergamus is said to be confined to the mountains of southern California. In San Diego County it flies from April to July. Though not at all common it may sometimes be found at high elevations in fairly good numbers, usually in company with other Swallowtails. Examples have been taken in Pine Valley at about 4000 feet elevation, on San Miguel Mountain, on the Laguna Mountains and at Kentwood-in-the-Pines, near Julian.

3. **Papilio rutulus** Lucas (15)

WESTERN TIGER SWALLOWTAIL

Rutulus occurs abundantly throughout the County, as it does throughout the entire western states region. Its lazy flight makes it rather easy of capture and it is present at all seasons and at all elevations. The larvae feed on willow and alder.

4. **Papilio multicaudata** Kirby (16)

DAUNUS SWALLOWTAIL

George H. Field, a veteran collector, reports having observed an example of this species in flight in the vicinity of Lake Hodges. The

[4] Numbers in parentheses refer to BARNES' and BENJAMIN'S "List of Diurnal Lepidoptera of Boreal America North of Mexico," Bulletin Southern California Academy of Sciences, Vol. XXV, Part 1, January, 1926.

fact that there are three tails on the secondaries made identification easy. May to August is the season of flight.

5. **Papilio eurymedon** Lucas (17)
Pale Swallowtail

From early spring to late September *eurymedon* may be found in some part of this County. Usually it maintains a residence in the upland meadows and about the tops of high hills or mountains, but occasionally descends to the low lands near sea level. The larvae feed on California coffee berry (*Rhamnus californica*).

Family PIERIDAE

6. **Pieris beckerii** (Edwards) (32)
Becker's White

Examples of *beckerii* are rare in this County, but the species has been taken in the semi-desert area on the eastern edge of the County. The similarity in maculation between this species and *protodice* makes positive identification rather difficult for any but experienced collectors. The larval food plant is usually some member of the mustard family.

7. **Pieris sisymbrii** (Boisduval) (33)
California White

Sisymbrii has been rarely taken in the Laguna Mountains and at Jacumba. Captures are usually made in the late spring or early summer months. The larvae feed on members of the mustard family.

8. **Pieris protodice** (Boisduval and Leconte) (35)
Common White

With the possible exception of *P. rapae, P. protodice* is the most common White in the entire United States. It is found in abundance everywhere in this County from sea level to mountain top, and occurs during every month from February to November. Persons unfamiliar with the species may be pardoned for calling it *P. beckerii,* which it resembles rather closely. However, the clouding on the underside of the secondaries will serve as a means of distinguishing it. As in the case of its allied species, the larval food plant belongs to the mustard family (*Cruciferae*).

9. **Pieris protodice vernalis** (Edwards) (35 gen. vern.)
VERNAL WHITE

This is simply the early spring form of *protodice*. It is lighter in color above, smaller in size and usually more distinctly veined below on the secondaries. Rather common in the canyons about the City of San Diego.

10. **Pieris rapae** (Linnaeus) (38)
CABBAGE BUTTERFLY

There is probably no more wide spread insect pest in America than this butterfly. The larval food is preferably members of the cabbage family of plants and the annual loss to truck gardeners caused by this insect amounts to many millions of dollars. It also feeds on nasturtium and mustard plants. In this County there has been a marked increase in its occurrence during the last twenty years and it bids fair to become a rather serious pest locally. *Rapae* is of European origin, having become established in the Province of Quebec, Canada, about seventy-five years ago, whence it has spread throughout the length and breadth of North America.

The name *rapae*, according to Dr. J. A. Comstock, is applicable only to the lightly marked spring brood, while the later members of the species are designated under the next name.

11. **Pieris rapae yreka** (Reakirt) (38 gen. aest.)
YREKA CABBAGE BUTTERFLY

This form of *rapae* is abundant in midsummer and autumn anywhere in the County.

12. **Nathalis iole** Boisduval (39)
DWARF YELLOW

Although this species has been reported as a "foot-hill and lowland species,"[5] in San Diego County it is more plentiful at higher elevations. The insect is rather rare near the coast. In the month of June, 1926, I was able to secure a large series without any trouble in the Laguna Mountains at an elevation of 6000 feet. The larval food plant in California is the downy bur marigold (*Bidens pilosa*).

[5] COMSTOCK, J. A., *op. cit.*, p. 36.

13. **Anthocharis lanceolata australis** (Grinnell) (43a)
Grinnell's Marble

A comparatively rare form and this record—Jacumba, San Diego County, California—extends its range far outside the previously known range. Formerly reported only from the southern Sierras.

14. **Anthocharis cethura** Felder and Felder (45)
Felder's Orange-tip

This form has been rare in San Diego County for a number of years, but some fifteen years ago its occurrence was rather common during early spring in the region near the coast. Dr. Comstock records it as a desert or semi-desert form, hence one should look for it on the eastern edge of the County. February to April is the best time.

15. **Anthocharis cethura deserti** W. G. Wright (45b)
Desert Orange-tip

A single specimen of this rare form was taken several years ago by George H. Field on Point Loma. It may turn up at almost any time along the eastern or desert edge of the County.

16. **Anthocharis sara** Boisduval (47)
Sara Orange-tip

In this County *sara* is found only near the coast and is considered a rare catch. The only records I have are from near Pacific Beach.

17. **Anthocharis sara stella** Edwards (47c)
Stellar Orange-tip

The same comment applies to this form as to the preceding. It is a dimorphic female about the same size as *sara,* but having a yellow suffusion above that varies somewhat in intensity. My specimens were captured near the coast in spring.

18. **Anthocharis sara reakirtii** Edwards (47 gen. vern.)
Reakirt's Orange-tip

This is one of the earliest of our common butterflies and, in its season, very abundant in canyons about the City and in the foothills

back from the coast. April and May are the best months in which to hunt for it.

19. **Anthocharis sara reakirtii** ab. **wrighti** J. A. Comstock (Not listed)[6]

WRIGHT'S ABERRANT ORANGE-TIP

Only one example of this beautiful butterfly has ever been recorded. The type is in the collection of the San Diego Society of Natural History.

20. **Catopsilia eubule sennae** (Linnaeus) (48)

SENNA SULPHUR

Although this form of the Cloudless Sulphur is supposed to be found only in the low altitudes near the coast, it is of record in my collection from Cuyapipe Canyon, Laguna Mountains, elevation about 5000 ft. This capture was made in June, 1926.

21. **Catopsilia eubule sennae** form **pallida** (Cockerell) (48 form)

PALLID SULPHUR

This form is an albinic female and is rather rare. The yellow tends to become white and, in extreme cases, disappears entirely. Several examples have been taken in San Diego County.

22. **Zerene eurydice** (Boisduval) (56)

CALIFORNIA DOG-FACE

A rare insect in the immediate vicinity of San Diego, but is occasionally found in Mission Valley, where its larval food plant, false indigo (*Amorpha californica*), grows. At El Monte, and in well watered canyons in the mountains, it flies in abundance during April and May. A second brood makes its appearance in July, and it may be taken occasionally as late as November.

23. **Zerene eurydice bernardino** (Edwards) (56a)

MARGINED DOG-FACE

In this form the secondaries of the male bear a black margin of

[6] Original description, J. A. COMSTOCK, *op. cit.*, p. 282.

greater or less extent. The females are the same as in the preceding species. Both forms are found in the same association here, and a long series will show intergrades from one extreme to the other.

24. **Zerene eurydice amorphae** (Henry Edwards) (56 gen. aest.)

Clouded Dog-face

A rare female form with markings that suggest the female of the Southern Dog-face. The amount of dark varies greatly in different individuals. I have one example taken in Mission Valley several years ago.

25. **Zerene caesonia** (Stoll) (57)

Southern Dog-face

Only one specimen of this species is known by the writer to have been taken within the County. This was captured near Mountain Springs in July, 1906.

26. **Eurymus eurytheme** (Boisduval) (61)

Boisduval's Sulphur

Scarcely a month in the year goes by but that some form of *eurytheme* may be found. Those occurring in early spring are said to be typical. They are usually smaller than the later forms and have but little of the characteristic orange suffusion on the disk of the primaries. Because of the larval habit of attacking alfalfa, it has been called the Alfalfa Butterfly in some sections of the country.

27. **Eurymus eurytheme** ab. **alba** (Strecker) (61 ab.)

Boisduval's Pale Sulphur

This white female form occurs constantly with all the forms of *eurytheme*. White takes the place of the yellow ground color, but in all other respects it is like the typical species.

28. **Eurymus eurytheme amphidusa** (Boisduval) (61 form)

Flavid Sulphur

Amphidusa is the summer form of *eurytheme* and is much more abundant than typical *eurytheme*. The larvae attack alfalfa and clovers

to such a degree that, as one writer suggests, "each of these yellow beauties represents just so much butter that has taken wing from the profits of the farmer."

29. **Eurymus harfordii** (Henry Edwards) (64)
HARFORD'S SULPHUR

Harfordii is often found associated with *eurytheme* in the foothills and mountain regions. It is rarely taken at coast elevations. The clear yellow of the wings and entire lack of orange suffusion, together with the contrasty black borders, serve admirably to separate the species from other Sulphurs of this locality.

30. **Eurema mexicana** (Boisduval) (75)
MEXICAN YELLOW

Only a few captures of this species have been recorded for San Diego County. It is, however, fairly common on the desertward slopes of the mountains.

31. **Eurema nicippe** (Cramer) (77)
NICIPPE YELLOW

Wherever cassia grows, Nicippe Yellow is of more or less common occurrence. Very abundant in Balboa Park during late August and early September.

Family **DANAIDAE**

32. **Danaus menippe** (Hubner) (85)
MONARCH

The Monarch is probably the best known butterfly in the United States and is common throughout the County from early spring to late fall. Wherever milkweed grows, there the Monarch may be found. It has been known to indulge in the habit of assembling in great numbers in the fall in this region on several occasions. In 1923 a great migratory swarm settled on the eucalyptus trees in Mission Valley not far from Old Town and was visited by numbers of people. About the same time another flight settled in a row of eucalyptus and cypress trees near Camp Hearn at Imperial Beach. Similar flights have been reported from Carlsbad and Del Mar. This is an interesting phenomenon and

well worth observation and study. The species is better known under its former names of *Anosia plexippus* or *Danaus archippus*.

33. **Danaus menippe** ab. **fumosus** (Hulst) (85 ab.)

Smoky Monarch

This is simply an aberration of the Monarch and is rather rare. I have one or two specimens taken in this County. In *fumosus* the rich red-brown of typical Monarch is replaced by smoky gray-brown, and in my examples the yellow or buff spots at the apex of the primaries have a tendency to become white.

34. **Danaus berenice strigosa** (Bates) (86a)

Striated Queen

Although *strigosa* is reported as rare in California, it is quite common in this County. The food plant is milkweed and its occurrence at various times from early spring to late autumn would indicate a number of broods. When flowers are most bountiful in the canyons, *strigosa* is fairly common and later it frequents gardens. Lantana, when in bloom, is very attractive to both the Monarch and the Queen.

Family **SATYRIDAE**

35. **Coenonympha california** Westwood & Hewitson (102)

California Ringlet

Grassy hills and sunny slopes are the favorite trysting places for hundreds of these delicate little Ringlets. A habit of flying low and darkening of colors beneath serve to prevent it from becoming conspicuous at any time. The collector may find it as early as February, and, in favored localities, as late as September. It is most abundant in April and May. I have never collected *california* anywhere but in the area between the coast and the foothills.

36. **Coenonympha california galactinus** (Boisduval) (102 form)

Boisduval's Ringlet

This form is characterized by the "creamy-yellow on the superior surface of the wings and brownish-yellow shadings on under side." The

number of eye-spots on the secondaries varies greatly and an occasional specimen will be found with the apical eye on the primaries twinned. Not at all common and never early. Associated with typical *californica* in late summer.

37. **Cercyonis silvestris** (Edwards) (116)

SYLVAN SATYR

During July and August this is a rather common butterfly on brushy hillsides in foothills and mountains of this County. It has been taken in some numbers in canyons just east of the City of San Diego. The insect is rather difficult to capture because of its habit of flying close to the ground in brushy places. It is an interesting capture at any time and well worth the effort necessary, even when attended by torn nets and scratched hands.

Family NYMPHALIDAE
Subfamily *HELICONIINAE*

38. **Dione vanillae** (Linnaeus) (148)

GULF FRITILLARY

Everyone who raises the passion vine is well acquainted with this silver-spangled beauty. It is very common about San Diego City from early spring to late summer, pursuing its devastating way with unerring certainty, and to the sorrow of the gardener. The caterpillars are voracious eaters and in a short time will practically defoliate the plant attacked; and when the natural food gives out they have been known to turn cannibal and eat each other. This is especially true of specimens confined for purposes of study.

Subfamily *NYMPHALINAE*

39. **Euptoieta claudia** (Cramer) (149)

VARIEGATED FRITILLARY

There seems to be no good reason why this Fritillary should not be common here, but so far as I know, only one example has ever been taken in this County. It was brought to me alive by a school boy who found it freshly emerged in his garden. The larva is said to feed on garden pansies.

40. **Argynnis semiramis** (Edwards) (175c)
Semiramis' Fritillary

From the middle of June to the middle of July this is the most common Fritillary in the mountain regions. It is very easy to capture, being slow of flight and fond of the low growing composite flowers that bloom in such profusion at that time.

41. **Argynnis callippe** (Boisduval) (176)
Callippe Fritillary

In late May, during favorable years, *callippe* may be found in wide canyons with grassy slopes near the coast. In the mountains it is associated sparingly with *semiramis* in June and very likely well into July. The food plant is violet and wherever *callippe* is found the dried-up leaves of the violet nestle close to the ground. The eggs are deposited near, with the knowledge that the young caterpillars will find the luscious fresh leaves in the spring. In June, 1926, the writer took *callippe* on the very top of Laguna Mountains and again (in 1927) Fred Thorn took it at the same place. These facts would seem to contradict the statements of Dr. Comstock in his "Butterflies of California," where he says that this is a butterfly of the lowlands and foothills.

42. **Euphydryas chalcedona** (Doubleday & Hewitson) (204)
Chalcedon Checker-spot

This beautiful Checker-spot flies during May and June. Occasional examples are found near the coast, but it is quite common among the foothills and mountains. A great many variations are to be found, many of which have been given names. Any large collection is very likely to contain examples of one or more aberrations or forms.

43. **Euphydryas chalcedona quino** (Behr) (209)
Behr's Checker-spot

The genus *Euphydryas* is a rather difficult one to work with and the species *chalcedona* is one of its most plastic members. The name *quino* was applied first to specimens found in this general region. In 1906 the type was lost and since then there has been much searching and a great deal of discussion relative to the status of *quino*. We have been following the nomenclature of Barnes' and Benjamin's "List" and have

regarded *quino* as abundant in this County. Recently J. D. Gunder has made a study of the genus and his active collecting has finally located the race under discussion on the edge of the desert in this County and northward as far as Palm Springs.[7] Specimens have been taken at Jacumba and at La Puerta, the former by Mr. Gunder and at the latter place by George H. Field. Dr. J. A. Comstock tells me he has taken it in canyons leading into Borego Valley in this and Riverside Counties. Early spring, about March, is the proper time to look for them.

44. **Euphydryas editha** (Boisduval) (212)

EDITHA CHECKER-SPOT

The late Dr. Rivers and Dr. Henry Skinner both identified San Diego examples of this species as *editha*. About twenty years ago, Fordyce Grinnell redescribed *quino*[8] (Behr's type having been lost) from specimens taken in San Diego, since which time the species has stood under that name. It is a very early flier—in some seasons as early as February, and frequents grassy slopes and hill tops near the ocean, where it is very abundant and easy to capture. The collection of the San Diego Society of Natural History contains a number of examples taken in September, which would indicate the possibility of two broods yearly.

45. **Euphydryas editha fieldi** Gunder (Not listed)

FIELD'S ABERRANT CHECKER-SPOT

This is a transition form of which, so far as known, only one specimen, the type, has ever been taken. The capture was made by George H. Field in San Diego during the month of April.

46. **Euphydryas editha wrighti** Gunder[9] (Not listed)

SOUTHERN CHECKER-SPOT

The type locality of this Checker-spot is in the southeastern part of San Diego City where it was collected by George H. Field in considerable numbers. It is considered by Mr. Gunder a perfectly good race of

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7 GUNDER, J. D. The Rediscovery of a Lost Race: Pan-Pacific Entomologist, Vol. V, pp. 1-5, July, 1928.

8 GRINNELL, FORDYCE, JR., Canadian Entomologist, Vol. XXXIX, p. 380, November, 1907.

9 Original description, J. D. GUNDER, Pan-Pacific Entomologist, Vol. VI, p. 5, July, 1929.

editha, differentiated from the typical species by certain color differences and the uniformly smaller size. The race is not easily recognized and a person will be obliged to make close comparisons with specimens taken in other localities to be sure. Mr. Gunder is of the opinion that this locality is the extreme northern edge of its range and that more collecting, in locations farther south, will show smaller examples and more evident color variations.

47. **Melitaea gabbii** (Behr) (225)

Gabb's Checker-spot

During March, April and May *gabbii* may be found in every canyon from ocean to mountain. It is usually very abundant and easy to capture.

48. **Melitaea chara** (Edwards) (235)

Chara Checker-spot

Reported by Dr. Comstock from the Borego Valley region. The home of this little gem is the desert region of southern and southeastern California. It occurs in two broods, the first in March and April, the second in October. "Only in rare seasons of unusual rainfall is it to be found in any numbers."[10]

49. **Melitaea leanira wrightii** (Edwards) (237)

Wright's Checker-spot

This race is rather rare in San Diego County, although every season yields a small series to some fortunate collector. Examples have been taken at Torrey Pines, along the hills bordering Mission Valley, in the Laguna Mountains and at many other places; but it is never found in large numbers.

50. **Phyciodes phaon** (Edwards) (249)

Phaon Crescent

We follow Dr. J. A. Comstock in using the name *phaon,* and would also here correct his slip in reference to publications.[11] The

[10] Comstock, J. A., *op. cit.,* p. 112.

[11] Comstock, J. A., *op. cit.,* p. 116.

species was published as *tharos* and *marcia* by W. G. Wright (not W. S. Wright) in his "Butterflies of the West Coast."[12] *Phaon* has made its appearance in San Diego County only within the last few years. It may be taken almost anywhere in the County from sea level to mountain top. Midsummer is the time of its flight.

51. **Phyciodes mylitta** (Edwards) (258)

MYLITTA CRESCENT

The only record I have for *mylitta* in this County is a small series taken at Bailey's, Palomar Mountain, July 17, 1927. It was quite common there in a small meadow, and industrious collecting would probably have resulted in a much larger series. The individuals are slightly smaller than northern and eastern specimens.

52. **Chlosyne lacinia crocale** (Edwards) (265c)

CROCALE PATCH

Not common in this region, but has been recorded from La Puerta and Vallecitos, in the Colorado desert, as of July occurrence.

53. **Chlosyne californica** (W. G. Wright) (266)

CALIFORNIA PATCH

March and April, September and October are the months when this beauty may be looked for. According to Dr. J. A. Comstock the species is a rarity and very local in its distribution. The San Diego Society of Natural History has a record for July at Mountain Springs and others are known from The Narrows, an opening into the desert near La Puerta.

54. **Polygonia satyrus** (Edwards) (274)

SATYR

The Satyr occurs rather sparingly in willow thickets near the coast and in shady places near running water in the mountains. Midsummer hikers may run across one almost any time.

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[12] WRIGHT, WILLIAM GREENWOOD. The Butterflies of the West Coast of the United States. San Bernardino, California, 1906, pp. 165, 166.

55. **Polygonia satyrus marsyas** (Edwards) (274a)
Marsyas Angle-wing

This form is often found in the same locality as the preceding species, of which some of our leading lepidopterists believe it to be simply a seasonal variety. Breeding has been suggested as a means of definitely fixing its status.

56. **Polygonia zephyrus** (Edwards) (277)
Zephyr

A record for this species occurs in the collection of George H. Field, giving Descanso as the locality and July 1st as the date of capture.

57. **Aglais californica** (Boisduval) (283)
California Tortoise-shell

The California Tortoise-shell is one of the earliest fliers in the mountain regions. My own records are from the vicinity of Henshaw Dam, in March. It is said that in favorable localities the larvae sometimes are so numerous as completely to defoliate the food plant—*Ceanothus*. When this occurs the adults are likely to swarm and obey an instinct to migrate, usually in a northerly direction. A flight of this kind is recorded from the Lake Tahoe region that continued for three days and consisted of many thousands of individuals.

58. **Aglais antiopa** (Linnaeus) (285)
Mourning Cloak

A very common butterfly in all parts of the Temperate Zone. It flies nearly all the year round in San Diego, breeds on willow and other related plants and is very easy to rear. Two forms are illustrated by Dr. Comstock which are likely to be found here. One is described as having an extraordinarily wide border, the other as having no blue spots in the border.

59. **Vanessa atalanta** (Linnaeus) (286)
Alderman

This butterfly is better known as the Red Admiral, but the true Admiral butterflies belong to another genus, so Dr. Comstock has chosen

to label it the Alderman, a name applied in England, probably referring to the colorful costumes worn by the old-time Aldermen of London. In this County it may be found from tide-water to mountain top although not very common. The food plant is commonly nettles, but the larvae will feed on hop and other allied plants.

60. **Vanessa virginiensis** (Drury) (287)

VIRGINIA LADY

This is a widely distributed member of the Painted Lady group. Holland calls it Hunter's Painted Lady and lists it as *V. huntera.* About San Diego the larvae feed on "everlasting" (*Gnaphalium*), and the adults like to fly about barren hill tops where they have a habit of choosing a bare spot which they guard, giving chase to everything that approaches. Midsummer is the best time to look for them.

61. **Vanessa cardui** (Linnaeus) (288)

PAINTED LADY

It is said that *cardui* is the most universally distributed butterfly in the world. Wherever thistles grow it may be found in some one or more of its numerous forms or races. While thistle seems to be the favorite larval food, many other plants are eaten with relish. There are seasons also when this butterfly appears in great swarms or flights, sometimes called "migratory flights." Two such flights have been observed in San Diego recently. During the spring of 1924 great numbers were observed coming from the southwest and flying in a general northerly direction. In 1925 the flight was repeated, but this time in greater numbers. It is not known what causes these flights, where the insects come from or where they go.

62. **Vanessa carye** (Hubner) (289)

WEST COAST LADY

While *cardui* is practically universal in its occurrence, *carye* is confined to the west coast of the Americas from Vancouver to Patagonia. It is of much the same appearance as *cardui,* except that it is smaller and the apex of the fore wings is straight, not rounded. The larval food plant is usually some form of mallow (*Malva*).

63. **Vanessa carye** ab. **letcheri** (Grinnell) (289 ab.)
Letcher's Butterfly

Of the several aberrations of *carye* this seems to be the most common. It is likely to be found at any time and in any place where the typical insect is found. My own experience seems to point to late summer as the best season and lantana and the white marguerite daisy as the plants most likely to be frequented by them.

64. **Junonia coena** Hubner (290)
Buckeye

Dr. Comstock, in "Butterflies of California," tells us that "The Buckeye is one of the most strikingly marked butterflies of North America, on account of the eye-spots." At any rate, once seen, the impression left is a lasting one. The beautiful rich brown of the background, the large "eyes" and the pugnacious habit of the butterfly command instant attention. In this County it may be taken at all elevations from sea level to mountain top (6500 ft.) and from early spring to late summer.

65. **Basilarchia lorquini** (Boisduval) (310)
Lorquin's Admiral

While *lorquini* is most often found along river bottoms and about moist areas, it is frequently found in the dry canyons adjacent to such locations, if willow grows there. Individuals often select a bright, sunny, open spot, bordered by willows, which they seem to guard, and will dart viciously at any insect, bird or even human that dares to enter the area.

66. **Heterochroa bredowii californica** Butler (313a)
California Sister

The California Sister has been known in southern California as the Oaktree Butterfly, having been given this name rather locally because of its habit of frequenting the live oaks and because the larvae feed thereon. It is a beautiful insect, rarely found in company with others of its kind, and too often entirely out of reach of the collector's net. However, during early forenoon or late afternoon, individuals descend to damp ground for a sip of water, when the careful collector may be rewarded with little effort.

Family RIODINIDAE

67. **Apodemia mormo** (Felder and Felder) (324)

MORMON METAL-MARK

The home of this butterfly is said to be the "desert regions to the south and east of Los Angeles County, on the Mojave Plateau, in the Owen's Valley and the Mono Basin."[13] We have to record it from La Puerta, San Diego County, on the eastern edge of the County, in semi-desert area.

68. **Apodemia mormo virgulti** (Behr) (324a)

BEHR'S METAL-MARK

Virgulti is a very interesting butterfly, common from sea level to mountain top in San Diego County. It might well be called the Darting Shadow, as its habit of flight during the heat of the day makes it look like a shadow and it is almost as elusive.

69. **Apodemia palmerii marginalis** (Skinner) (325 form)

MARGINED METAL-MARK

We are told that *marginalis* is limited to Imperial Valley and contiguous desert areas. We record it from La Puerta Valley on the eastern edge of San Diego County in abundance during July.

70. **Calephelis nemesis** (Edwards) (334)

DUSKY METAL-MARK

We refer to Dr. Comstock as authority for the occurrence of *nemesis* only in desert or semi-desert regions. It occurs in abundance at San Diego along the San Diego River and in all canyons leading to it near the coast. The larval food plant is said to be *Bebbia juncea.*

71. **Calephelis nemesis australis** (Edwards) (334)

SOUTHERN METAL-MARK

The habitat of this race is given as the same region as the typical species. We record it from La Puerta on the western edge of the Colorado desert, where it occurs commonly in July.

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[13] COMSTOCK, J. A., *op. cit.*, p. 149.

Family **LYCAENIDAE**
Subfamily *THECLINAE*

72. **Habrodais grunus** (Boisduval) (338)
Boisduval's Hair-streak

A rather somber-colored butterfly frequenting oak bushes in the live oak district. At times there are veritable swarms of them. The writer has seen them at Cuyamaca Lake in immense numbers, fluttering about the low live oak bushes.

73. **Atlides halesus** (Cramer) (339)
Great Purple Hair-streak

We have records of this beauty from the vicinity of Jacumba and in the Laguna Mountains. It is said to be more plentiful on the edge of the desert about water-holes. At best it is never abundant in this locality.

74. **Strymon columella** (Fabricius) (350)
Columella Hair-streak

Only a few examples of this modest little Hair-streak have ever been taken here. It is considered a rare catch.

75. **Strymon leda** (Edwards) (354)
Leda Hair-streak

The writer has taken this beauty in the summer and in the fall. A fine series from the Laguna Mountains taken in August and at least one specimen in the City of San Diego (Mahogany Canyon) in October. It is never abundant.

76. **Strymon leda ines** (Edwards) (354a)
Ines Hair-streak

Our records for *ines* in this County are confined to the vicinity of Jacumba in July, 1906. A small series was taken at that time and place about the cat's claw trees (*Acacia greggii*).

77. **Strymon melinus** Hubner (357)
Common Hair-streak

Everywhere a common insect. We have examples taken at all elevations within the County and at all seasons.

78. **Strymon californica** (Edwards) (365)

CALIFORNIA HAIR-STREAK

A very common butterfly in the foothills and mountains from June to August. We have found it most common about the flowers of milkweed. It is easily taken and easily recognized.

79. **Strymon sylvinus** (Boisduval) (367)

SYLVAN HAIR-STREAK

The Sylvan Hair-streak will be found most commonly in association with willows along watercourses or in adjacent canyons. It is often called *dryope* when compared with illustrations in "Butterflies of the West Coast," but it has been observed that *dryope* occurs only in central and northern California.[14]

80. **Strymon auretorum spadix** (Henry Edwards) (373a)

NUT-BROWN HAIR-STREAK

A large series of this interesting and comparatively rare species fell to my net at Cuyamaca Lake some years ago. It is said to be found only on rare occasions and at widely separated places. June and July may produce them for the conscientious collector.

81. **Strymon adenostomatis** (Henry Edwards) (374)

GRAY HAIR-STREAK

This might well be called the Chaparral Hair-streak, since its principal place of abode is the so-called Elfin Forest. Very common everywhere in San Diego County.

82. **Strymon saepium chlorophora** Watson & W. P. Comstock (375 form)

PURPLISH-BROWN HAIR-STREAK

This species is found in association with the previous species and is very common throughout our district from tide-water to mountain top during June and July. Almost any patch of dodder, if in bloom, will yield them in abundance.

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[14] COMSTOCK, J. A., *op. cit.*, p. 161.

83. **Mitoura spinetorum cuyamaca** W. S. Wright (377)
Cuyamaca Hair-streak

While Barnes and Benjamin have reduced this form to synonomy we are still of the opinion that it is a good race, since it is the only race taken in this region. Typical *spinetorum* has never been recorded from this County. Rather abundant in its season on Laguna Mountains, and has been taken at Julian and Cuyamaca Lake.

84. **Mitoura nelsoni** (Boisduval) (379)
Nelson's Hair-streak

Three specimens from Cuyapipe Canyon, Laguna Mountains, and a small series from Palomar, all taken in June, seem to be this species. I have seen no others from this locality, but there seems to be no reason why the species, or a form of it, should not be found here.

85. **Mitoura nelsoni** ab. **exoleta** (Henry Edwards) (379ab.)

A small series answering to the description of aberration *exoleta,* a variety in which the whole lower surface of the wings is immaculate and of a "dull chestnut brown" color, has been taken on Palomar Mountain.

86. **Mitoura loki** (Skinner) (383)
Skinner's Hair-streak

Loki is probably closely allied to *M. siva* or is a form of that species. It occurs only in the juniper belt from Jacumba, the type locality, northward. Not very plentiful in this County. The type was taken in July, but the season probably begins about the middle of June.

87. **Incisalia iroides** (Boisduval) (385)
Western Elfin

This is one of the earliest butterflies in San Diego County. I have taken them near the coast as early as February. They are usually fairly abundant in the mountains in June.

88. **Incisalia eryphon** (Boisduval) (392)
Western Banded Elfin

It has never been my privilege to take a specimen of this species

but my friend, George H. Field, tells me it has been taken on the Laguna Mountains in recent years. As the larval food-plant is believed to be pine, and there is a decided pine belt on these and other mountains in the County, it should be taken here.

89. **Callophrys dumetorum** (Boisduval) (394)

BRAMBLE HAIR-STREAK

On hillsides and low elevations *dumetorum* makes its appearance rather early—March and April. Its rather slow habit of flying makes it easy of capture. It has been taken abundantly on the slopes toward the sea on Point Loma and on the hill tops farther east, at least to Flynn Springs.

90. **Callophrys dumetorum perplexa** Barnes & Benjamin (394a)

PERPLEXING HAIR-STREAK

This is a race of the preceding species and is found to be quite common about the City. It will be known by the entire absence of white spots on the under side of the wings or by simply a suggestion of the spots on the secondaries.

Subfamily *CHRYSOPHANINAE*

91. **Tharsalea virginiensis** (Edwards) (403)

NEVADA COPPER

Specimens in the collection of the San Diego Society of Natural History taken near Jacumba, San Diego County, and a series in the collection of George H. Field, taken at Warner's Hot Springs, are undoubtedly *virginiensis*. This note will extend the range of this species as the latest published records state that it occurs from "northeastern California to Colorado."[15] The larval food plant is known to be wild currant and gooseberry both of which are common in this County.

92. **Tharsalea hermes** (Edwards) (404)

HERMES COPPER

In late May, all of June and early July, the canyons leading into

[15] COMSTOCK, J. A., *op. cit.*, p. 172.

Mission Valley near San Diego are inhabited by a number of very interesting species, among them *hermes*. Its beautiful combination of brown and yellow makes it a veritable fairy and gives untold joy to the collector fortunate enough to get one. Its trysting places are being rapidly taken over by realtors and the species may soon become extinct, unless colonies yet undiscovered are located in other regions. I am told that Chris. Henne, of Los Angeles County, captured specimens in the vicinity of Ensenada, Mexico, which seems to indicate that we are on the northern extremity of its range.

93. **Heodes gorgon** (Boisduval) (405)
Gorgon Copper

While *gorgon* is reputed to be of State-wide distribution and has been taken in this County, it is apparently quite rare here. Some years ago it was known to be established in the Morena Dam region, but not in anything like large numbers. It was taken then in association with the next species.

94. **Heodes xanthoides** (Boisduval) (407)
Great Copper

Very common throughout the foothills and mountain districts. Every meadow will produce them in considerable numbers.

95. **Heodes helloides** (Boisduval) (412)
Purplish Copper

Almost any moist meadow land from sea coast to mountain top has a colony of *helloides*. It is easily captured and may usually be taken in large numbers.

Subfamily *LYCAENINAE*

96. **Leptotes marina** (Reakirt) (421)
Marine Blue

A very dainty little creature, rather difficult to capture because of its swift, darting flight. It is partial to the bloom of alfalfa and the common deerweed (*Lotus scoparius*) and is to be found everywhere within our region.

97. **Brephidium exilis** (Boisduval) (422)
PIGMY BLUE

This is said to be the smallest American butterfly. It may be found throughout the County wherever the so-called Australian salt grass (*Atriplex semi-baccata*) is to be found. Very abundant along the bay shores and on hillsides and mesas throughout the City and County.

98. **Brephidium exilis** ab. **coolidgei** Gunder (422 ab.)
COOLIDGE'S ABERRANT BLUE

A single specimen of *exilis* is in the collection of the San Diego Society of Natural History, in which the characteristic marks of the typical species are absent in large measure. Above, the specimen has the same appearance as *B. exilis,* but beneath, practically all the marks are either absent altogether or greatly accented.

On the primaries beneath, the terminal line of white spots is much more conspicuous than in the type. The rest of the wing is the same as that of the typical species in general color, but the white cross lines and strigations are entirely absent. On the underside of the secondaries the marginal row of black spots is reduced from six in number to four and the white band in which they are situated is much wider and more brilliant. The three black dots near the base of the wing are transformed into three black dashes, broad and conspicuous, lying parallel with the veins, no other marks appearing. J. D. Gunder has called this form aberration *coolidgei.*[16]

99. **Hemiargus gyas** (Edwards) (426)
EDWARDS' BLUE

During June, 1926, the writer took large numbers of this Blue in the meadows about Laguna Lake, Laguna Mountains. It was the most plentiful species present at the time. The species occurs everywhere in the County.

100. **Hemiargus isola** (Reakirt) (428)
REAKIRT'S BLUE

George H. Field reports this species as occurring in Jacumba in July.

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[16] GUNDER, J. D., Entomological News, Vol. XXXVI, p. 2, January, 1925.

101. **Everes amyntula** (Boisduval) (430)
Western Tailed Blue

This is the only Blue in this region that sports a tail on the secondaries. Wherever the so-called loco weed (*Astragalus leucopsis*) is found, there *amyntula* plays in its season.

102. **Plebejus melissa** (Edwards) (432)
Orange-margined Blue

In the female of this species both wings are margined with a line of orange-colored lunules joined to form a continuous band. This band is also present as a line of spots on the underside of the wings in both sexes. It is very common in low places where vetch grows; also sweet clover is very attractive to it. In 1902 a colony was discovered in an area now covered by the waters of Morena Reservoir, in which the individuals were so numerous that in the cool of evening they hung on the grass like azure pendants.

103. **Plebejus saepiolus** (Boisduval) (435)
Greenish Blue

Saepiolus occurs on Palomar Mountain at Bailey's and, in its season, could probably be taken in some numbers. The species has many variants. The specimens under consideration may prove to be form *hilda*.

104. **Plebejus saepiolus rufescens** (Boisduval) (435 form)
Rufescent Blue

This is a dark female form of *saepiolus* and is rare. Only one specimen of record has ever been taken in this County, on Palomar Mountain several years ago. However, it is likely to occur at any time wherever *saepiolus* is found.

105. **Plebejus saepiolus hilda** (Grinnell) (435b)
Hilda Blue

A relatively rare race found only in the southern part of California at high elevations. Palomar Mountain produced the specimens in the collection of the San Diego Society of Natural History and they were taken at Bailey's in July.

106. **Plebejus icarioides** ab. **daedalus** (Behr) (438 ab.)
DAEDALUS BLUE

A comparatively rare form of the typical species. The writer has taken it at Dulzura. It is very likely that it may occur through the higher elevations in this County.

107. **Plebejus icarioides evius** (Boisduval) (438b)
EVIUS BLUE

Frequently found in the mountains in considerable numbers. Very plentiful on the Lagunas during June, 1926, where it was found frequently on the blooms of the lupine.

108. **Plebejus pheres** (Boisduval) (440)
PHERES BLUE

Examples are in the collection of George H. Field bearing *pheres* label that were taken on Cuyamaca Mountain in the vicinity of Cuyamaca Lake.

109. **Plebejus acmon** (Westwood & Hewitson) (442)
ACMON BLUE

One of the earliest and latest of our Blues. Abundant everywhere. Has many varieties due to elevation, flora and climate.

110. **Plebejus acmon cottlei** (Grinnell) (442a)
COTTLE'S BLUE

This is a spring form of *acmon* in which the orange band on the secondaries is somewhat wider than in typical *acmon* and the blue of the upperside is richer in tint. The ground color beneath is a darker grey than in typical *acmon*. A series from near Henshaw Dam taken in early spring is thus designated.

111. **Plebejus acmon** ab. **kelseyi** W. S. Wright new aberration
KELSEY'S BLUE

The description of aberrations we believe is not to be encouraged to any great extent, but when a form appears that seemingly has no explainable reason for being, one feels fairly safe in adding a new name. Such is the case here.

The specimen under consideration was taken along with a large series of perfectly normal examples. It has an expanse of only 16.5 mm. In color above, it is a normal male with only a trace of the orange red color on the secondaries (probably due to the remarkably small size) and with the black spots much reduced. Beneath, all wings are light gray and immaculate but for a normal row of black dots near the margin, a discal, elongated transverse dash and the apical dot on primaries twinned. The row of dots on the secondaries is normal, with supplementary minute dots in the space between veins 4 and 5 and at the apex. The most prominent feature of this form is the immaculism of the underside of the wings. The form approaches *labecula* Watson and W. P. Comstock, an aberration of *cottlei*.

I have given it the name of *kelseyi* as a courtesy to my friend, Prof. F. W. Kelsey, who has presented me with many interesting specimens in all orders.

112. **Plebejus monticola** (Clemence) (444)

Clemence's Blue

Dr. J. A. Comstock makes this species a form of *acmon*, but I am holding to the classification of Barnes and Benjamin. It is fairly common in the higher elevations throughout the County, characterized by large size and lustrous quality of the blue. An interesting capture at any time.

113. **Philotes battoides bernardino** Barnes & McDunnough (448b)

San Bernardino Blue

Bernardino is very common throughout the County during June and July. It is fond of the flowers of the wild buckwheat (*Eriogonum*). There seem to be several local varieties, some of which may deserve names when further collections bring enough specimens together to render close study possible.

114. **Philotes sonorensis** (Felder and Felder) (454)

Sonora Blue

Not a common insect in this County although, when located, a colony may consist of many hundreds of individuals. Point Loma, in the vicinity of the Bennington Monument, supports a colony, and other

smaller ones are to be found at La Jolla and near Encanto. It is an exquisite little insect and may be considered a prize well worth a long, hard trip.

115. **Phaedrotes piasus** (Boisduval) (455)
ARROW-HEAD BLUE

"Butterflies of the West Coast" figures this species as *sagittigera* and it doubtless rests in many collections under this name. The only records for this County are from a point about three miles west of Henshaw Dam, in the San Luis Rey River Valley, where it was found feeding on a species of lupine.

116. **Glaucopsyche lygdamus australis** Grinnell (456e)
SOUTHERN BLUE

This beautiful insect may usually be found in March in the canyons near San Diego. The males are deep blue above, the females more or less dark brown on the outer third of the wings. Beneath they are gray, with a series of small black spots encircled with white. It is also common among the foothills in early spring.

SUPERFAMILY HESPERIOIDEA
Family **HESPERIIDAE**
Subfamily *URBANINAE*

117. **Polygonus lividus arizonensis** (Skinner) (464a)
SKINNER'S ARIZONA SKIPPER

John C. Fortiner has three specimens of this interesting species taken several years ago on lantana bushes in Balboa Park, San Diego. We have never seen it in this County, but there is no reason why it should not occur in abundance.

118. **Epargyreus tityrus** (Fabricius) (467)
SILVER-SPOTTED SKIPPER

Rather rare in this County but has been taken in the City and at Henshaw Dam. It is a rapid flier and difficult to capture.

119. **Goniurus proteus** (Linnaeus) (469)
Long-tailed Skipper

Proteus makes its appearance in the City periodically. It is common about gardens when it is to be found. Never abundant. The larvae feed on beans, hence it may be of economic importance.

120. **Thorybes mexicana** (Herrick-Schaeffer) (488)
Mexican Dusky-wing

A fairly good series of this Skipper was taken on Laguna Mountains during June, 1926. It is probably found also in other places of similar elevation.

121. **Urbanus ruralis** (Boisduval) (498)
Two-banded Skipper

One specimen taken on Palomar Mountain in July seems to represent this species. It is, however, somewhat lighter in color than more northerly captures.

122. **Urbanus tessellata occidentalis** (Skinner) (503a)
Western Checkered Skipper

A very common Skipper occurring throughout the County from tide-water to mountain top at all times of the year except during the winter months.

123. **Urbanus ericetorum** (Boisduval) (505)
Large White Skipper

While the collector naturally looks for this active fellow only in the higher altitudes of the County, it is not uncommon at sea level. There has been a considerable colony in Mahogany Canyon on the eastern edge of the City for a number of years.

124. **Antigonus pulverulenta** (R. Felder) (509)
Powdered Skipper

Frank Stephens has taken examples of this species at La Puerta on the western edge of the desert in March. Not common at any point where known.

125. **Pholisora libya** (Scudder) (512)
MOJAVE SOOTY-WING

It is not uncommon to take *libya* during March on the edge of the desert. La Puerta is a good place to look for it.

126. **Pholisora catullus** (Fabricius) (513)
SOOTY-WING

A few specimens were taken at the west entrance to San Felipe Rancho in the early spring of 1926. This is a very widely distributed species, occurring in practically all temperate regions of North America.

127. **Erynnis lacustra** (W. G. Wright) (526)
WRIGHT'S DUSKY-WING

John C. Fortiner tells me he has taken *lacustra* in some numbers on the Laguna Mountains at an elevation of approximately 6000 ft. Dr. J. A. Comstock states in "Butterflies of California" that it is recorded from widely separated areas of high altitudes in the south; so it should occur here.

128. **Erynnis persius afranius** (Lintner) (528a)
AFRANIUS DUSKY-WING

Very abundant in the higher altitudes about damp locations. Occurs sparingly in the vicinity of San Diego, principally in Mission Valley.

129. **Erynnis juvenalis** (Fabricius) (531)
JUVENAL'S DUSKY-WING

Dr. Comstock states, in "Butterflies of California," that there is some doubt as to the occurrence of *juvenalis* in California, but the writer has taken it (identified by the late Dr. Henry Skinner) in almost every association in San Diego County.

130. **Erynnis propertius** (Scudder & Burgess) (532)
PROPERTIUS DUSKY-WING

The Dusky-wings are very difficult to separate, so that microscopic anatomical diagnosis is almost necessary for correct determination. A

long series of the previous species is sure to show some individuals that answer to the description of the present one, so it is included here. George H. Field has it from Volcan Mountain taken in July and identified by the late Dr. Henry Skinner.

131. **Erynnis tristis** (Boisduval) (538)
Mournful Dusky-wing

We have made no microscopic anatomical studies among the Skippers, hence no positive identifications are given. San Diego County is included in the general region inhabited by *tristis,* and we have examples that answer in a superficial way, at least, to this species, so it is here included.

132. **Erynnis funeralis** (Scudder & Burgess) (539)
Funereal Dusky-wing

The species of Dusky-wing having a white fringe on the secondaries that is taken in San Diego and immediate vicinity is undoubtedly *funeralis.* It is fairly abundant from early spring to late summer.

Subfamily *HESPERIINAE*

133. **Copaeodes aurantiaca** (Hewitson) (552)
Hewitson's Skipper

It is said that this species frequents the desert areas, but it may be found almost anywhere in the County. Specimens have been taken at tide-water and also at an elevation of 6000 ft. It is not common anywhere.

134. **Pseudocopaeodes eunus** (Edwards) (554)
Eunus Skipper

A colony of this species exists at Jacumba and may be taken there during July and August. Specimens in our collection were collected by J. D. Gunder on a species of aster growing in a meadow close to the international boundary. The writer took a single specimen in the same locality the year following Mr. Gunder's captures. Probably a very rare species in this County.

135. **Hesperia columbia** (Scudder) (565)
COLUMBIA SKIPPER

George H. Field obtained examples of this species from San Miguel Mountain, April 15, 1914. The collection was made near Cockatoo Grove.

136. **Hesperia juba** (Scudder) (569)
JUBA SKIPPER

This species, together with other near relatives, is a puzzle to the amateur and likely to give a lot of trouble. Examples in the collection of George H. Field have been given this name by experts, so we include it in our list. It is a common resident of the higher altitudes in July.

137. **Hesperia viridis** (Edwards) (571)
GREEN SKIPPER

This is in the same class with the preceding species and may give some difficulty in identification. However, it is common in the Laguna Mountains and should be found at all similar elevations throughout the County.

138. **Hylephila phylaeus** (Drury) (582)
FIERY SKIPPER

In San Diego this is the most abundant of all the Skippers. Every grass patch teems with them during the summer.

139. **Ochlodes sylvanoides** (Boisduval) (583)
WOODLAND SKIPPER

We have a very good series taken on the Laguna Mountains during June, 1926, and there is no doubt that it occurs on the mountains and higher hills to the north as well. A single specimen was captured in Balboa Park in 1928.

140. **Ochlodes nemorum** (Boisduval) (584)
FOREST SKIPPER

Nemorum occurs in the same association as the preceding species and has been taken in the City of San Diego.

141. **Polites sabuleti** (Boisduval) (596)
Sandhill Skipper

A very common Skipper on lawns throughout the City and in grassy spots in canyons leading into Mission Valley. It probably occurs in favorable localities in the back country.

142. **Polites sabuleti comstocki** Gunder (596b)
Desert Sandhill Skipper

To quote from "Butterflies of California" by Dr. John Adams Comstock: This is "a desert race of *sabuleti*. In this form the spots and light yellow streaks on the underside of the secondaries are so faint as to give the appearance of a clear yellow surface." Mr. Gunder tells me that he has taken it at Jacumba in this County.

143. **Atalopedes campestris** (Boisduval) (599)
Field Skipper

The males of this species are distinguished by the presence of a large oval black gland on the disk of the primaries. Common about low, swampy places in the mountains.

144. **Atrytone vestris** (Boisduval) (605)
Dun Skipper

A specimen of this species rests in George H. Field's collection, having been captured at the "head of Potrero grade," near Potrero.

145. **Lerodea eufala** (Edwards) (650)
Eufala Skipper

This species has been recorded from San Diego County at the foot of Cottonwood grade. More plentiful along the edge of the desert.

146. **Prenes errans** (Skinner) (658)
Wandering Skipper

A very common Skipper along the water-front from San Diego to San Onofre in July and August.

Family **MEGATHYMIDAE**

147. **Megathymus yuccae navajo** Skinner (660b)
Navajo Skipper

A race of *M. yuccae* has been taken sparingly in Mahogany Can-

yon on the eastern edge of the City and it may occur in other parts of the County, since its food plant—one of the yuccas—is abundant throughout this region. We believe this to be the race *navajo*.

148. **Megathymus stephensi** Skinner (669)
STEPHENS' SKIPPER

A rare butterfly in collections, but rather abundant in its habitat near La Puerta on the edge of the desert. It is on the wing from July to October and is very difficult to capture because of its rapid, darting flight.

SPECIES AND FORMS OF POSSIBLE OCCURRENCE BUT NOT YET OF RECORD

Pieris rapae novangliae (Scudder) (38ab.)
TINTED CABBAGE WHITE

While this form has never been recorded from California it may appear at any time in our higher altitudes. Specimens that approach it in depth of the yellow tinting on the upper surface have been taken in this County.

Euchloe creusa lotta Beutenmuller (40c)
SOUTHERN MARBLE

This form has been reported from the Coachella Valley and it would seem that it might occur in similar habitat in the northeastern part of this County.

Cercyonis silvestris paulus (Edwards) (116a)
LITTLE SATYR

The dominant *Cercyonis* in this region is *silvestris,* but through errors in identification years ago, it has been rather widely distributed as *paulus,* which is only a race of *silvestris* and is said not to occur here. Specimens approaching this race may be taken in this County.

Euptoieta hegesia (Cramer) (150)
MEXICAN FRITILLARY

This is a Mexican species and has never been taken in California. However, our proximity to the border makes for many possibilities, so that collectors should be on the lookout for it.

Euphydryas chalcedona (Doubleday & Hewitson) (204)

ab. **fusimacula** (Barnes)
ab. **suprafusa** J. A. Comstock
ab. **fusisecunda** J. A. Comstock
ab. **mariana** (Barnes)
ab. **supranigrella** J. A. Comstock
ab. **hemimelanica** J. A. Comstock
ab. **omniluteofuscus** Gunder
ab. **hemiluteofuscus** Gunder

All of the above named aberrations of the Chalcedon Checker-spot have been given appropriate English names by Dr. J. A. Comstock in his recent book. No localities are given for their occurrence but, since the typical species is common in this County and since its habitat here is subject to temperature and altitudinal changes that are likely to produce such varied forms in a species so plastic as *chalcedona,* we may expect to find one or more of these aberrations here at any time.

Euphydryas quino augusta (Edwards) (209)

AUGUSTA CHECKER-SPOT

For many years the *editha* of this County was known and distributed as *augusta,* but recent publications have restricted the latter to the San Bernardino region. However, we have a feeling that close collecting in the higher altitudes bordering the desert may reveal a colony of this comparatively rare form.

Melitaea gabbii (Behr) (225)

ab. **newcombi** (J. A. Comstock)
ab. **gunderi** (J. A. Comstock)
ab. **pasadenae** (Gunder)

None of these aberrations have so far been taken in this County, but there is reason to believe that one or more of them may turn up at any time, since *gabbii* is one of the most abundant Checker-spots found here.

Melitaea leanira wrightii (Edwards) (237)

ab. **cerrita** (W. G. Wright)
ab. **carolynae** (Gunder)

These two aberrations of Wright's Checker-spot may occur at any time, so collectors should be on the lookout for them.

Phyciodes campestris (Behr) (253)

FIELD CRESCENT

According to Dr. J. A. Comstock this species occurs in all parts of the State, hence it should occur here. Collectors are asked to keep a sharp lookout for examples in moist mountain meadows.

Chlosyne lacinia (Geyer) (265)

BORDERED PATCH

Dr. Comstock tells us that this species does not occur in typical form north of the Mexican line. The specimens that are occasionally taken in Imperial Valley and adjacent desert areas are probably *C. l. adjutrix* Scudder. *Crocale* has been taken at La Puerta and since the species is a very plastic one, *lacinia* itself might occur on the eastern edge of the County. The following color forms are also likely to occur—*rufescens* (Edwards) and *nigrescens* (Cockerell).

Chlosyne californica ab. **chinoi** Gunder (266 ab.)

CHINO PATCH

This form was collected at Palm Springs not very far north of San Diego County and might also occur in this County, since similar conditions prevail in the northeast corner.

Libythea bachmanii Kirtland (323)

SNOUT BUTTERFLY

Not yet recorded from this County, but has been taken in Imperial County and may be discovered in the Laguna Mountain district.

Apodemia mormo (Felder and Felder) (324)

MORMON METAL-MARK

At least one good race of this species has been recorded in this County—*virgulti* (Behr)—and there are two more that may turn up at any time, namely: *mejicanus* (Behr), near the Mexican border, and *deserti* Barnes & McDunnough in the desert areas on the eastern edge of the County.

Strymon saepium (Boisduval) (375)

HEDGE-ROW HAIR-STREAK

At least two good forms of this species have been recorded.[17]

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[17] COMSTOCK, J. A., *op. cit.*, p. 162.

Chlorophora Watson & W. P. Comstock is known to occur here and, while there are no definite records of the typical species in this region, there seems to be no good reason why it should not be found. The form *fulvescens* (Henry Edwards) may also occur here. The points of difference are well shown on Plate 49 of Comstock's "Butterflies of California."

Mitoura siva juniperaria J. A. Comstock (380a)

Juniper Hair-streak

Specimens approaching this race have been taken in the juniper belt and there seem to be possibilities worth investigation along the eastern edge of the County.

Tharsalea arota (Boisduval) (402)

Arota Copper

Arota is found in practically all parts of the State and should be found here. If it is, it may prove to be the race *T. nubila* J. A. Comstock, which is described as the southern form of *Arota*.

Heodes xanthoides luctuosa (Watson & W. P. Comstock) (407 form)

Mourning-garbed Copper

While this race was named from specimens collected in the central part of the State—Tehachapi Pass—it may also occur in the higher altitudes of San Diego County.

Philotes sonorensis ab. **sonoralba** Watson & W. P. Comstock (454ab.)

Philotes sonorensis comstocki Gunder (454 form)

Both these insects are likely to occur here. The variations from typical *sonorensis* are well shown in figures on Plate 56, "Butterflies of California," Comstock.

Poanes melane (Edwards) (617)

Umber Skipper

Further collecting in the wooded areas of the County may produce this species. It is known to be common in parts of southern California.